

Appropriate Disposal of Substances Containing Perfluorooctane Sulfonate (PFOS)

Starting May 29, 2013 the manufacture, use, sale, offer for sale or import of perfluorooctane sulfonate (PFOS) and its salts, as well as products containing these substances, will be prohibited in Canada.

That date marks the end of the five-year grace period granted when the federal regulation overseeing the use, source and release of PFOS came into force. Some exemptions are included. More details are available on the federal government's website at www.gazette.gc.ca/rp-pr/p2/2008/2008-06-11/html/sor-dors178-eng.html.

The information in this fact sheet will help stakeholders determine the suitable options for disposing of these materials.

What is PFOS?

PFOS – or perfluorooctanyl sulfonate – is a synthetic chemical that comes from a large family of compounds known as perfluorinated alkyl compounds which:

- can build up in the body's tissues
- are persistent in the environment
- are found in remote locations where they have not been used.

PFOS has a half-life in humans of approximately four years and 1,000 years in the environment. PFOS, its salts and precursors have been added to the List of Toxic Substances in Schedule 1 under the Canadian Environmental Protection Act.

In their assessment of PFOS published in July 2006, Environment Canada found that PFOS, its salts and precursors are entering the environment in a quantity or concentration that have or may have immediate or long-term harmful effects on the environment or its biological diversity.

Chronic exposure to PFOS has been observed to cause both carcinogenic and non-cancer effects in animals. However, the human health assessment done by Health Canada and Environment Canada concluded that current levels would not have a harmful effect on humans.

PFOS and its uses

PFOS-containing substances are used in:

- fire-fighting foams such as aqueous film forming foam (AFFF)
- aviation hydraulic fluid
- fume suppressants used in metal plating industry
- anti-reflective coatings for photolithography processes
- as water, oil, soil and grease repellents in manufactured products, among other uses.

Environment Canada contacted the following groups to advise that they need to comply with regulatory requirements by May 29, 2013:

- fire-fighting services
- metal plating industries
- chemical manufacturing companies
- packaging companies
- paper companies
- textile companies
- plastics producers
- photography-related companies
- mining companies.

Waste Disposal in Ontario

Regulations under the [Environmental Protection Act](#) provide the Ministry of the Environment with the authority to regulate and enforce the 'cradle-to-grave' management of hazardous waste and liquid industrial waste.

[Regulation 347](#) requires generators to determine if their waste is a hazardous or liquid industrial waste. Each generator must accurately characterize and register the wastes they generate. In many cases, a combination of the knowledge of the generator and laboratory testing will be the best approach to characterizing the waste. The waste generator must ensure their waste is appropriately managed (i.e., shipped off-site, using approved carriers and receivers).

Generators should undertake individual classification of their wastes. This is because substances containing PFOS may have different additional contaminants, depending on the industry.

Different brands or uses of PFOS can result in different contaminants. These need to be considered in the characterization process. The same holds true for AFFF, where the contaminants may differ from one stockpile to another.

The regulation, guidance documents and fact sheets are available on the ministry's website at www.ene.gov.on.ca/environment/business_hazardous_waste.htm.

Appropriate Disposal of Substances Containing PFOS

According to Environment Canada, PFOS (including its salts and precursors) disposed of in sewer systems will end up in the environment. Therefore, PFOS-containing substances should not be discharged into municipal sewer systems even if they are not considered as hazardous wastes.

In their assessment, Environment Canada assumed that the disposal method for PFOS-containing substances is high temperature thermal destruction. This is consistent with the ministry's preliminary review of approaches of other jurisdictions, and of technologies possibly suitable for the treatment and disposal of PFOS – which also found the most appropriate method to be high temperature thermal destruction.

Summary

Disposal of PFOS must follow the requirements set out in [Regulation 347](#) for generator registration and appropriate waste disposal. Generators are encouraged to use best management practices to dispose of PFOS, such as using high temperature thermal destruction. For rinse and wash water, PFOS may first have to be concentrated (i.e., using activated carbon), before sending it to the high temperature thermal treatment facility.

MOE Contact Information

Additional technical and regulatory information is available through local offices of the Ministry of the Environment. To locate the closest office, visit www.ene.gov.on.ca/environment/regional.htm

Aussi disponible en français.